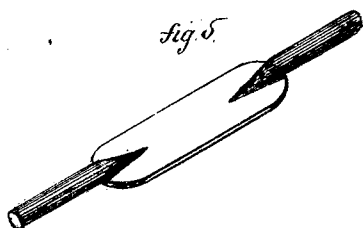
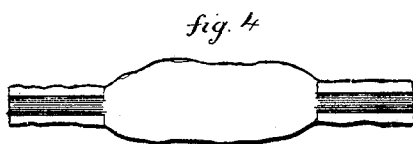
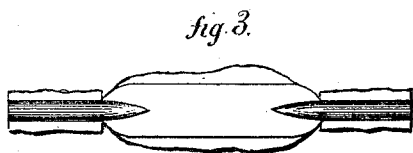
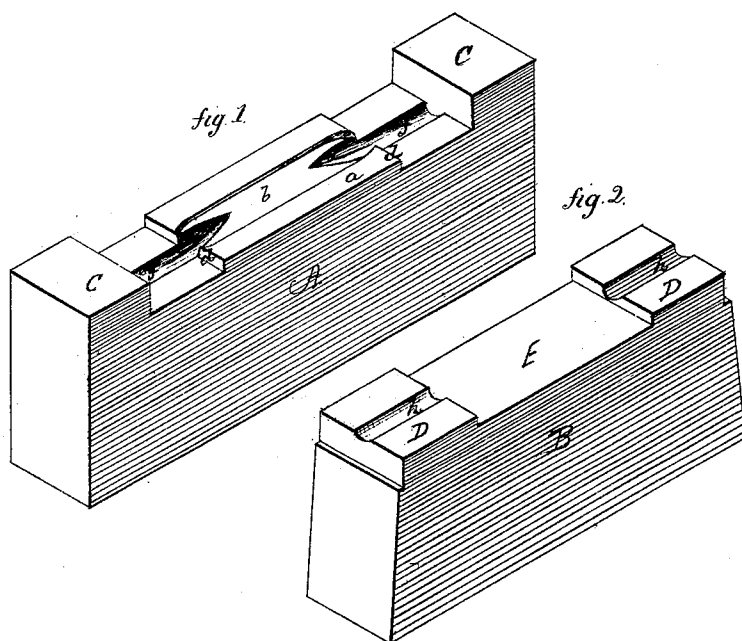


F. B. Morse,

Forging Carriage Clips.

No. 108283.

Patented Oct. 11, 1870.



Witnesses
H. H. Humm
A. J. Abbott

Francis B. Morse,
Inventor
By his Attorney,
John E. Egan

UNITED STATES PATENT OFFICE.

FRANCIS B. MORSE, OF PLANTSVILLE, CONNECTICUT, ASSIGNOR TO
HIMSELF AND H. D. SMITH & CO., OF SAME PLACE.

IMPROVEMENT IN DIES FOR SWAGING CARRIAGE-CLIPS.

Specification forming part of Letters Patent No. **108,283**, dated October 11, 1870.

To all whom it may concern:

Be it known that I, FRANCIS B. MORSE, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new Improvement in Dies for Forging Carriage-Clips; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, a perspective view of the lower part of the die; Fig. 2, a perspective view of the upper part of the die; Figs. 3 and 4, reverse sides of the clip as it comes from the die, and in Fig. 5 the clip after being trimmed.

This invention relates to an improvement in forging the article of manufacture known to the trade as "carriage-clips."

Great difficulty has been experienced in the process of forging these articles to throw the metal so as to make a perfect construction at the intersection of the bolt ends with the body, and various devices to overcome this difficulty have been resorted to.

By my invention this difficulty is entirely overcome; and it consists in forming the lower die with a shoulder or recess at each end at the point or intersection of the bolt and body part of the clip, and a buttress constructed at each end of the die, to prevent the extension of the blank, and the upper die constructed so as to correspond to the lower die.

A is the lower, and B the upper, die. In the central portion *a* of the lower die a recess, *b*, is formed, corresponding to the shape of the body of the clip, and at the end of the said central portion, which is the length of the body of the clip, a drop or shoulder, *d*, is formed, in which a recess, *f*, corresponding to one half of the bolt, is formed, the said recess

running up and dying out in the recess *b*, and at each end of the die a buttress, *C*, is formed. The upper die is constructed, accordingly, with projections *D* at each end, having recesses *h* formed therein corresponding to the other half of the bolt. The central portion *E* is sunk corresponding to the central portion *a* of the lower die, so that the two dies will set together.

I take a blank of sufficient diameter to allow the necessary metal for the formation of the clip, and cut the length required, so as to drop in between the two buttresses *CC*. This, heated and placed in the die, and the upper part, *B*, struck thereon, is formed corresponding to the shape of the die, and the bolt part, owing to the shoulders *d*, is struck clear and distinct from the body, as denoted in Fig. 5, insuring a perfect formation of both the clip and bolt.

The buttresses prevent the elongation of the metal in the process of striking up, and therefore practically upset the metal, just so much as it would naturally elongate were the buttresses not present to support the ends. These buttresses, one or both, may be made adjustable, or attached to the die in any desirable manner; yet I prefer to form them a part of the die.

The article as it comes from the die is represented, the lower side as in Fig. 3, and the upper side as in Fig. 4. These presented to the trimming-dies, the surplus metal is cut away, leaving the clip finished, as in Fig. 5, and this is done without previously upsetting.

I claim as my invention—

The improved dies, constructed as herein described, for forging carriage-clips.

F. B. MORSE.

Witnesses:

SALMON C. CLARK,
WM. R. SMITH.